





State Water Resources Control Board DRAFT

TO:

Water Board Managers and Staff

FROM:

Renee Spears, SWRCB Quality Assurance Officer

OFFICE OF INFORMATION MANAGEMENT AND ANALYSIS

DATE:

April 27, 2015

SUBJECT:

Withdrawal of Approval of the SWRCB Alternative Test Procedure for the Two-

concentration Test Design for NPDES Effluent testing when using the TST

The purpose of this memo is to inform you of the February 11, 2015 notice of withdrawal of the United States Environmental Protection Agency's (USEPA) approval of the State Water Resources Control Board's (State Water Board) Alternative Test Procedure (ATP) request. USEPA had approved the request to use the two-concentration test design when using the Test of Significant Toxicity (TST). This memo includes our interpretation of the withdrawal and its ramifications for the Water Boards' permitting process requirements.

History and Timeline

In a letter dated February 12, 2014, the SWRCB Quality Assurance Officer, Renee Spears, submitted an ATP request to USEPA Region 9 for the statewide use of a two-concentration toxicity test design when using the Test of Significant Toxicity (TST) approach (Attachment 1). This two-concentration test design is composed of a single effluent concentration and a control concentration.

The TST statistical analysis only requires the biological responses from the two-concentration test design. Currently the multiple-concentration test design (a minimum of five effluent concentrations compared to a control concentration) is required under Code of Federal Regulations, title 40, section 136.3. The two-concentration test design is more cost effective when using the TST since, at a minimum, the number of concentrations necessary is reduced by four (including all the replicates).

As stated in the February 12th letter, State Water Board staff is developing a toxicity amendment to the <u>Water Quality Control Plan for Enclosed Bays and Estuaries of California</u> that will standardize the regulation of aquatic toxicity for all non-oceanic surface waters. U.S. EPA's TST approach is an essential component of this draft toxicity amendment as it forms the basis for utilizing numeric water quality objectives and acts as the primary means of determining compliance with the proposed effluent limitations. It provides a definitive value of whether a sample is toxic versus an interpreted (and debatable) value as determined by the NOEC and IC₂₅ approaches.

USEPA approved the ATP request on March 17th 2014 (Attachment 2). In June 2014, the approval was challenged in court on procedural grounds under the Administrative Procedures Act by the Southern California Alliance of Publicly Owned Treatment Works (SCAP) and the Central Valley Clean Water Association

FELICIA MARCUS, CHAIR | THOMAS HOWARD, EXECUTIVE DIRECTOR

1001 | Street, Sacramento, CA 95814 | Mailing Address: P.O. Box 100, Sacramento, CA 95812-0100 | www.waterboards.ca.gov

Figure 1. Toxicity Testing and Analysis Pathways for NPDES Permits Requiring the Multiple-Concentration Test Design

	Code of Federal Regulations Part 136				
	<u>Test Design</u>	Biological Responses	Statistical Analysis	Data Interpretation	Ioxicity Determination
Permit Specifies What Test Species and Method	Minimum = 5 Effluent Concentrations plus Control Concentration		Permit Specifies Either Hypothesis tests or Point Estimate		Compared to the Permit limit/Trigger
For Each Test Species There is a list of up to 23 Summary Test Conditions that are Required or Recommended	Example: 5 [] and a control []	% Survival, Reduction in Growth, Reproduction, etc.	Hypothesis Test: (TST) Instream Waste [] and a Control []	Simple: Either Pass/Fail, and Percent Effect	Definitive Result
	Example: 5 [] and a control []	% Survival, Reduction in Growth, Reproduction, etc.	Hypothesis Test: NOEC Point Estimate: LC50 for Survival or EC25 for Growth	Complex: Requires Greater Expertise to Determine Results	Interpretive Result

What is Required and What is Discretionary Within the Permit?

For those permits specified which are required to use the multiple-concentration test design,

Figure 1. illustrates the following:

- 1. The permit specifies what test species and method to be used
- 2. The multiple-concentration test design requirement is required under Code of Federal Regulations, title 40, section 136.3
- 3. The biological responses are also incorporated by reference in Code of Federal Regulations, title 40, section 136.3
- 4. The permit specifies the statistical analysis, such as:
 - a. A hypothesis test using the TST
 - b. A hypothesis test using the NOEC
 - c. A point estimate test using LC50 or EC25